

Virus, Vector and Transmission

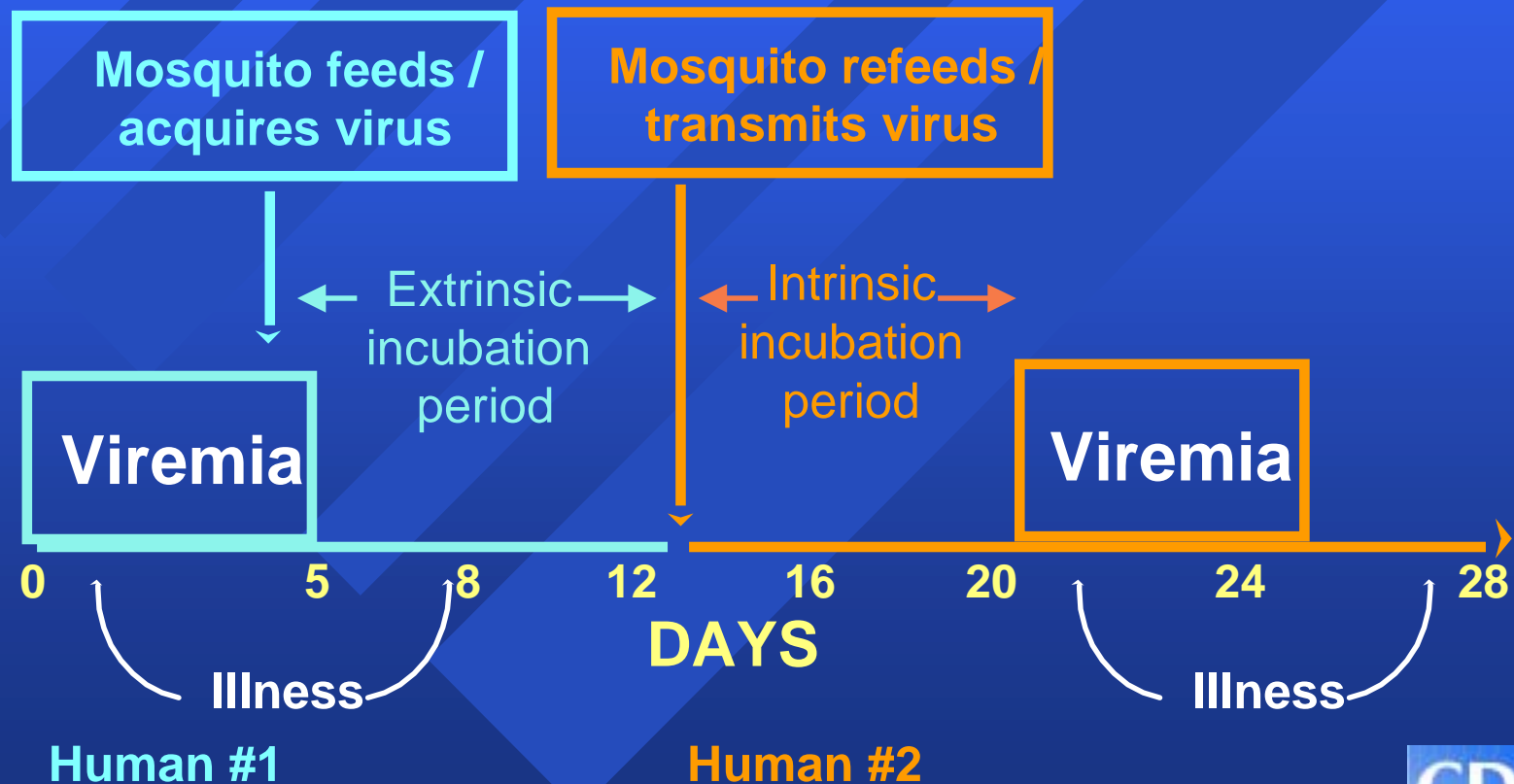
Dengue Virus

- Causes dengue and dengue hemorrhagic fever
- Is an arbovirus
- Transmitted by mosquitoes
- Composed of single-stranded RNA
- Has 4 serotypes (DEN-1, 2, 3, 4)

Dengue Viruses

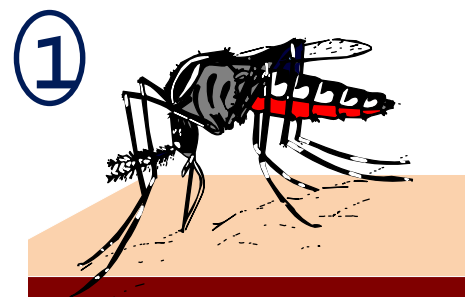
- Each serotype provides specific lifetime immunity, and short-term cross-immunity
- All serotypes can cause severe and fatal disease
- Genetic variation within serotypes
- Some genetic variants within each serotype appear to be more virulent or have greater epidemic potential

Transmission of Dengue Virus by *Aedes aegypti*

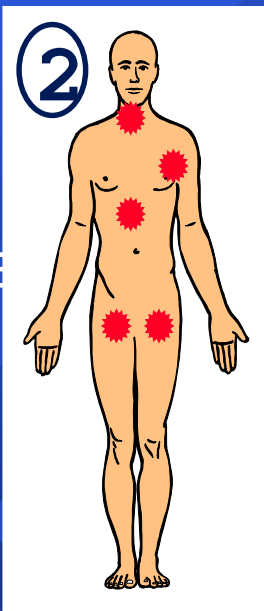


Replication and Transmission of Dengue Virus (Part 1)

1. Virus transmitted to human in mosquito saliva



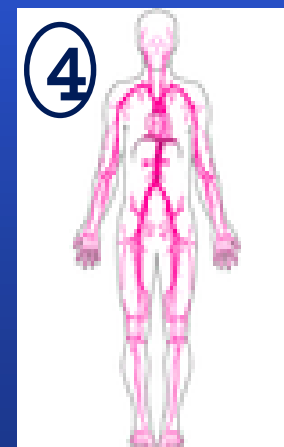
2. Virus replicates in target organs



3. Virus infects white blood cells and lymphatic tissues

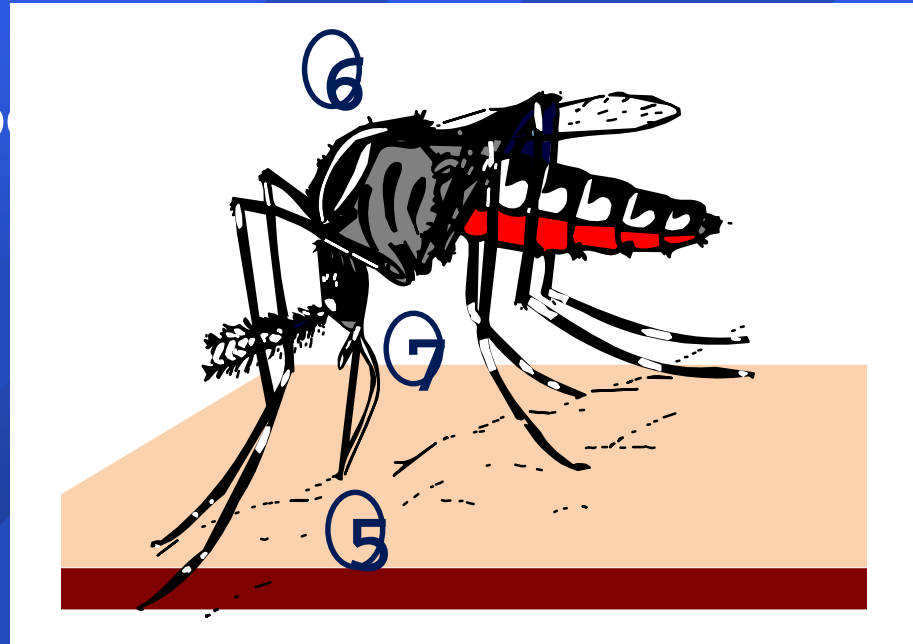


4. Virus released and circulates in blood



Replication and Transmission of Dengue Virus (Part 2)

5. Second mosquito ingests virus with blood
6. Virus replicates in mosquito midgut and other organs, infects salivary glands
7. Virus replicates in salivary glands



Aedes Mosquito



Aedes Mosquitoes

- Dengue transmitted by infected female mosquito
- Primarily a daytime feeder